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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/701,535	11/30/2000	Hiroki Haga	L9289.00123	5463

7590 03/30/2004

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EXAMINER

NGUYEN, DUNG X

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 03/30/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/701,535

Applicant(s)

HAGA ET AL.

Examiner

Dung X Nguyen

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawing Objection

1. Figure 1 is objected and should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 recites the limitation "the modulated" in line 11. There is insufficient antecedent basis for this limitation in the claim.
4. Claim 2 recites the limitation "the first decision" in line 2. There is insufficient antecedent basis for this limitation in the claim.
5. Claim 3 recites the limitation "the previously decided or updated ranking"" in line 3. There is insufficient antecedent basis for this limitation in the claim.
6. Claim 4 recites the limitation "the modulated" in line 13. There is insufficient antecedent basis for this limitation in the claim.
7. Claim 5 recites the limitation "the modulated" in line 14. There is insufficient antecedent basis for this limitation in the claim.

8. Claim 6 recites the limitation "the modulated" in line 13. There is insufficient antecedent basis for this limitation in the claim.
9. Claim 7 recites the limitation "the modulated" in line 14. There is insufficient antecedent basis for this limitation in the claim.
10. Claim 8 recites the limitation "the modulated" in line 11. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. **Claims 1 and 4 - 8 are rejected** under 35 U.S.C. 103(a) as being unpatentable over figure 1 admitted as the prior art by applicant, further in view of Ling et al. (US patent # 5,619,524).

Regarding claim 1, figure 1 admitted as the prior art by applicant discloses:

- Likelihood calculation means for calculating likelihood of each symbol included in a reception signal (page # 2, line 17 to page # 3, line 16 of the specification);
- Ranking decision means for deciding or updating a ranking of each symbol, based on calculated likelihood (page # 3, lines 17 – 27 of the specification);
- Demodulation means for demodulating a symbol with the highest position in the ranking (page # 5, lines 9 – 23 of the specification);

Art Unit: 2631

- Cancellation means for canceling the modulated symbol from the reception signal (page # 5, line 24 to page # 6, line 9 of the specification).

Figure 1 admitted as the prior art by applicant differs from the instant claimed invention that it does not provide the control means for controlling updating operation.

However, Ling et al. discloses the control means for updating operation (see control signal (178) and gate (179) of figure 4, and column 4, lines 31 – 67, column 14, lines 34 – 36, and column 15, lines 43 - 44).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine figure 1 admitted as the prior art by applicant and Ling et al. to provide the control means for controlling updating operation for facilitating the coherent communication reception (abstract of Ling et al.).

Regarding claims 4 – 8, the limitations are analyzed in the same manner set forth as claim 1.

Allowable Subject Matter

13. **Claims 2 and 3 would be allowable** if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Documents:

Yoshida (U.S. Patent # 6,282,233 B1) discloses a multi-user receiving apparatus and CDMA communication system.

Art Unit: 2631

Tiedemann, Jr. et al. (U.S. Patent # 6,396,867 B1) discloses a method and its corresponding apparatus for forward link power control.

Wang et al. (U.S. Patent # 6,501,778 B1) discloses a method and its corresponding apparatus for interference cancellation in spread spectrum communication systems..

Other Publications:

Yoshino et al., "Interference Canceling Equalizer (ICE) for Mobile Radio Communications", IEEE International Conference on Communications 1994, Conference Record, Serving Humanity through Communications, 1 – 5 May 1994, vol. 3, pp. 1427 – 1432.

CONTACT INFORMATION

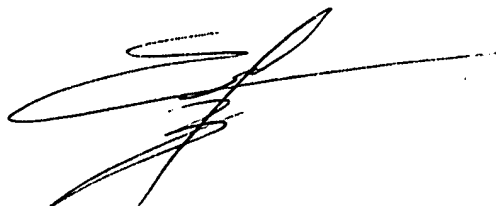
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung X. Nguyen whose telephone number is (703) 305-4892. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Ghayour Mohammad H. can be reached on (703) 306-3034. The fax phone numbers for this group is (703) 308-6743.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.

DXN

December 26, 2003

A handwritten signature in black ink, consisting of several loops and a long horizontal stroke extending to the right.